

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Seghatol et al.

Serial No.: 10/822,548

Examiner: Patrick Neal Butler

Filing Date: April 12, 2004

Group Art Unit: 1732

Title: Intra-Oral Microwave Polymerization Method for Dentistry

## COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria VA 22313-1450

## TRANSMITTAL LETTER FOR CORRECTED APPEAL BRIEF

Sir:

Transmitted herewith is/are the following in the above-identified application:

- ☐ Response/Amendment
 ☒ Petition to extend time to respond  
☐ New fee as calculated below
 ☐ Supplemental Declaration  
☐ No additional fee (Address envelope to "Mail Stop Amendments")  
☒ Other: Corrected Appeal Brief (Fee \$0.00)

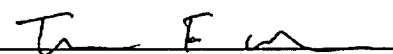
(1) FOR	(2) CLAIMS REMAINING AFTER AMENDMENT	(3) NUMBER EXTRA	(4) HIGHEST NUMBER PREVIOUSLY PAID FOR	(5) PRESENT EXTRA	(6) RATE	(7) ADDITIONAL FEES
TOTAL CLAIMS		MINUS		= 0	X	\$ 0
INDEP. CLAIMS		MINUS		= 0	X	\$ 0
<input type="checkbox"/> FIRST PRESENTATION OF A MULTIPLE DEPENDENT CLAIM					+ 370	\$ 0
EXTENSION FEE	1 <sup>ST</sup> MONTH \$65.00 <input checked="" type="checkbox"/>	2 <sup>ND</sup> MONTH <input type="checkbox"/>	3 <sup>RD</sup> MONTH <input type="checkbox"/>	4 <sup>TH</sup> MONTH <input type="checkbox"/>		\$ 65.00
					OTHER FEES	\$ 0
TOTAL ADDITIONAL FEE:						\$ 65.00

Charge \$65.00 to Deposit Account 50-4136. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 50-4135 pursuant to 37 CFR 1.2 5. Additionally please charge any fees to Deposit Account 50-4135 under 37 CFR 1.16, 1.17, 1.19, 1.20 and 1.21.

Respectfully submitted,

Seghatol et al.

By

  
 Thomas F. Woods  
 Attorney/Agent for Applicant(s)

I hereby certify that this paper is being electronically transmitted to the Commissioner for Patents on the date shown below.

Date of Transmission: Feb. 2, 2009

Typed Name: Thomas F. Woods

Signature: 

Reg. No. 36,726

Date: Feb. 2, 2009

Telephone No. (303) 823-6560

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of Seghatol et al.

Attorney Docket No.: 109880

Confirmation No.: 1792

Application No.: 10/822,548

Examiner: Patrick Neal Butler

Filed: April 12, 2004

Group Art Unit: 1732

For: INTRA-ORAL MICROWAVE POLYMERIZATION METHOD FOR DENTISTRY

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**CORRECTED APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Corrected Appeal Brief is presented in support of the Notice of Appeal to the Board of Patent Appeals and Interferences filed February 27, 2008, from the final rejection of claims 1, 33 and 37 as set forth in the Final Office Action of October 31, 2007, further to a Notification of Non-Compliant Appeal Brief issued December 4, 2008, and in accordance with the one-month extension of time submitted herewith.

The Appellant respectfully requests reconsideration and reversal of the Examiner's rejections of the pending claims.

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DATE OF DEPOSIT: Feb. 2, 2009

**CERTIFICATE OF ELECTRONIC DEPOSIT:** I hereby certify that all paper(s) described herein are being filed electronically with the United States Patent and Trademark Office on the date indicated above and addressed to Mail Stop Appeal Brief - Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Signature: 

Printed Name: Thomas F. Woods, Reg. No. 36,726

**I. REAL PARTY IN INTEREST (37 C.F.R. § 41.37(c)(1)(i)).**

The real parties in interest of the above-identified patent application are Marc Seghatol of Montreal, Canada and Brad Pedersen of Minneapolis, Minnesota.

**II. RELATED APPEALS AND INTERFERENCES (37 C.F.R. § 41.37(c)(1)(ii)).**

Appellants and their legal representatives know of no other appeals or interferences that may be related to, directly affect or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

**III. STATUS OF CLAIMS (37 C.F.R. § 41.37(c)(1)(iii)).**

Claims 1, 33 and 37 are pending in the application. Claims 2-32, 34-36, and 38-41 have been canceled. Claims 1, 33, and 37 have been finally rejected and are the subject of this appeal.

**IV. STATUS OF AMENDMENTS (37 C.F.R. § 41.37(c)(1)(iv)).**

All amendments have been entered. No amendments have been filed subsequent to the Final Office Action mailed October 31, 2007.

**V. SUMMARY OF CLAIMED SUBJECT MATTER (37 C.F.R. § 41.37(c)(1)(v)).**

A concise explanation of the subject matter defined in claims 1, 33 and 37 is set forth below, including reference to the specification of U.S. Application Serial No. 10/822,538, filed on April 12, 2004, (hereinafter "Application") by page and line number and to the drawings by reference characters. The concise explanation does not provide an exhaustive or exclusive view of the subject matter defined in the claims.

In general, the present invention is directed to an intra-oral method of polymerizing hardenable dentistry polymer compositions using a hand-held microwave device [60-69]. The present invention provides a new technique for intra-orally curing polymer materials used in dentistry that uses microwave energy applied by a hand-held tool [60-69] within the mouth of the patient to cure or harden the hardenable dental object. See generally Application, at page 1, lines 18-20, page 13, lines 5 – page 14, line 7.

As indicated in the prosecution history, claims 1, 33 and 37 have been copied from U.S. Patent No. 6,605,051 to Stangel et al. The claims on appeal stand rejected as anticipated by Stangel et al. Upon an indication of allowability of claims 1, 33 and 37 other than for this anticipation rejection, applicants will submit a request for interference with Stangel et al. as applicants contend that they are the first true and correct inventors of the claimed invention. As support for their claim of an interference, it is noted that the provisional application 60/099,654 to which Stangel et al. claims priority lists Dr. Marc Seghatol, the inventor of the present application, as one of the inventors of the Stangel et al. provisional, although Dr. Seghatol was curiously omitted as an inventor from the declaration of the Stangel et al. utility patent application. The suggested request for interference will offer facts supporting the claim that Dr. Seghatol had hired Dr. Stangel and that Dr. Stangel had, unbeknownst to Dr. Seghatol, substantially copied a draft of Dr. Seghatol's patent application as his own.

**A. CLAIM 1**

A method for constructing a part of a tooth using a hardened object. See generally Application, at page 1, lines 18-20, page 13, lines 5 – page 14, line 7, page 15, lines 3-21, page 16, line 24 – page 17, line 14 and description with respect to Figures 9-14 at pages 18-24.

The method comprises forming a hardenable object into a shape suitable for reconstructing part of a tooth from a microwave curable polymer composition. See id., for example, at page 24, lines 1-3.

The method further comprises using a hand held microwave source [60-69] to apply microwave energy to intra-orally harden said hardenable object. See id., for example, at page 28, lines 8-20.

**B. CLAIM 33**

A method for forming a hardened object. See generally Application, at page 1, lines 18-20, page 13, lines 5 – page 14, line 7, page 15, lines 3-21, page 16, line 24 – page 17, line 14 and description with respect to Figures 9-14 at pages 18-24.

The method comprises forming a hardenable object from a microwave curable composition. See id., for example, at page 24, lines 1-3.

The method further comprises using a hand-held microwave source [60-69] to apply microwave energy to intra-orally harden said hardenable object. See id., for example, at page 28, lines 8-20.



**C. CLAIM 37**

A method for forming a hardened object. See generally Application, at page 1, lines 18-20, page 13, lines 5 – page 14, line 7, page 15, lines 3-21, page 16, line 24 – page 17, line 14 and description with respect to Figures 9-14 at pages 18-24.

The method comprises forming a hardenable object from a microwave curable composition, said object when cured comprising a dental prosthesis or an orthodontic element. See id., for example, at page 24, lines 1-3.

The method further comprises using a hand-held microwave source [60-69] to apply microwave energy to intra-orally harden said hardenable object. See id., for example, at page 28, lines 8-20.

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL (37 C.F.R. § 41.37(c)(1)(vi)).**

A. Whether claims 1, 33 and 37 are unpatentable for non-statutory obviousness-type double patenting over claim 5 of U.S. Patent No. 6,737,619 in view of U.S. Patent No. 3,868,513 (Gonser).

B. Whether claims 1, 33 and 37 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,147,903 (Podszun) in view of U.S. Patent No. 4,873,269 (Nakazato) and U.S. Patent No. 5,421,727 (Stevens).

**VII. ARGUMENT (37 C.F.R. § 41.37(c)(1)(vii)).**

**A. REJECTION OF CLAIMS 1, 33 AND 37 FOR DOUBLE PATENTING**

The Examiner rejected claims 1, 33 and 37 as being unpatentable on the grounds of nonstatutory obviousness-type double patenting over claim 5 of U.S. Patent No. 6,737,619 in view of U.S. Patent No. 3,868,513 (Gonser). While appellants are willing to concede the double patenting rejection in view of claim 10 of U.S. Patent No. 6,254,389 and file an appropriate terminal disclaimer, appellants respectfully request reversal of the rejection of claims 1, 33 and 37 over claim 5 of U.S. Patent No. 6,737,619 in view of Gonser in light of the prosecution history and the following comments. All three independent claims that are the subject of this appeal are being argued together and will stand or fall collectively.

Claim 5 of U.S. Patent No. 6,737,619 claims “A method of polymerizing dental prosthetics and dental composites formed of a resin matrix comprising: providing a source of microwave energy; applying the microwave energy through an antenna to the resin matrix; applying a pressurized gas to the resin matrix during the step of applying the microwave energy; and introducing additional material to the resin matrix during the step of applying the microwave energy.” It is respectfully submitted that a person of ordinary skill in the art would recognize that the step of “applying a pressurized gas” is a step that cannot be accomplished using known techniques for intra-oral dentistry within the mouth of a patient. Gonser describes nothing more than a conventional UV light applicator for curing UV-polymerizable polymers as is well known in the art and as is discussed in the background section of the present application. See, application, page 10, line 25 – page 12, line 2. The Examiner has failed to establish any kind of reasoned basis for which a person skilled in the art, without relying on any part of the present application other than the claims, would have

considered that there would be a motivation, suggestion or reasonable expectation of success to combine a UV light applicator for curing UV polymerizable polymer compositions with a microwave curing process for curing thermally polymerizable dental composites that is extra oral. Moreover, the temperatures at which conventional microwave polymer compositions are cured are significantly higher than the temperatures involved in UV curing of UV polymerizable polymer compositions. See, application, page 9, lines 2-7. Without any teaching or suggestion of how to overcome this issue other than the teaching of the present application, it is respectfully submitted that the Examiner's cursory argument fails to establish a *prima facie* case of nonstatutory obviousness-type double patenting

**B. REJECTION OF CLAIMS 1, 33 AND 37 UNDER 35 U.S.C. § 103(a)**

The Examiner rejected claims 1, 33 and 37 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,147,903 (Podszun) in view of U.S. Patent No. 4,873,269 (Nakazato) and U.S. Patent No. 5,421,727 (Stevens). Appellants respectfully request reversal of the rejection in view of the prosecution history and the following comments. All three independent claims that are the subject of this appeal are being argued together and will stand or fall collectively.

It is initially noted that the Final Rejection dated October 31, 2007 was mailed just after the promulgation of the newly updated Examination Guidelines for Determining Obviousness under 35 U.S.C. 103 – MPEP 2141. In the response before the Final Rejection, appellants had noted the requirement imposed by the Supreme Court in *KSR International Co. v. Teleflex Inc. (KSR)*, 550 U.S. 398, 82 USPQ2d 1385 (2007) that an examiner must provide a reasoned basis for why a claim would be obvious in view of a combination of prior art references; however, appellants did not have the benefit of the newly updated PTO

guidelines on analyzing obviousness when arguing against the cursory combination of references proposed by the Examiner in the rejections of the claims on appeal. Accordingly, the appellants respectfully request that the Examiner utilize the newly updated guidelines in evaluating the obviousness of the claims on appeal.

It is respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness of the claims on appeal and has not performed any of the three factual inquiries underlying an evaluation of the obviousness of a claimed invention:

- (A) Determining the scope and content of the prior art;
- (B) Ascertaining the differences between the claimed invention and the prior art; and
- (C) Resolving the level of ordinary skill in the pertinent art.

MPEP § 2141 (2007).

Instead, the Examiner has improperly utilized the hindsight afforded by the teaching of the present invention to merely regurgitate the very prior art teachings that are discussed and distinguished in the background section of the present application. Podzun teaches the kind of thermally polymerizable materials that are discussed in the background section as being conventionally cured by either heat bath or microwave ovens and Nakazato teaches the microwave oven curing of a thermally polymerizable material. See, application at pages 8, line 1 – page 10, line 13. Stevens is expressly discussed and distinguished in the background section of the present application because Stevens is directed only to disinfecting a tooth *during* a root canal procedure. See, application at page 12, lines 9-12. As a person skilled in the art would recognize, during a root canal the patient is anesthetized and the pulp of the tooth is removed such there will be no ability to feel pain or heat in that tooth. Because of this unique situation and because of the knowledge of the temperatures involved in

conventional microwave oven curing of thermally polymerizable dental compositions (e.g., 150° C – See, application at page 9, lines 2-7), it is respectfully submitted that a person of ordinary skill in the art would not have any reasonable expectation of success in considering the use of a handheld sterilization probe for root canals as a mechanism for intra-orally curing thermally curable dental composites. On the contrary, the prior art teaches away from such a combination in view of the extreme temperatures associated with conventional microwave oven curing of thermally curable dental composites.

Contrary to the position taken in the final Office Action, the recitation of the temperatures associated with conventional microwave oven curing of thermally curable dental composites is not “mere attorney argument.” The appellants have already established in the background section of the application by reference to known commercial systems (e.g., a G.C. Acron dental microwave oven - See, application at page 9, lines 2-7) the temperature ranges for conventional microwave oven curing of thermally curable dental composites. There is nothing in the arguments or references cited by the Examiner that would contradict or overcome this evidence.

In addition, it is respectfully submitted that there is nothing in the purported combination advanced by the Examiner that would lead a person skilled in the art to have any reasonable expectation of success that a microwave disinfectant device could be used to cure thermally curable dental polymer materials. There is simply no reasoned basis for this bald assertion by the Examiner in the Office Action.

Contrary to the posture taken by the Examiner in the Final Rejection, it is respectfully submitted that it is the Examiner, and not the appellants, who has failed to carry the burden of proof in this case. It is appellants’ position that the Examiner has never established a *prima*

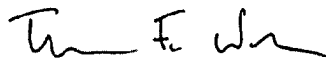
*facie* case of obviousness that would require the appellants to submit rebuttal arguments and/or evidence.

Finally, it is the appellants' position that the Examiner's failure to present a *prima facie* case of obviousness is completely undercut by the fact that the core of the copied claims were already found patentable in Stangel et al. (U.S. Patent No. 6, 605,651) over the Steven reference. The rejection of the currently appealed claims effectively constitutes a double miscarriage of justice in this case in that these claims were unknowingly taken from the first true inventors by a supposed colleague and consultant hired to assist them and then improperly denied them by the Examiner when appellants attempted to rectify their initial injury by initiating the procedure of placing the claims in condition for allowance in order to properly provoke an interference with the offending patent to Stangel et al.

**C. CONCLUSION.**

Appellant submits that claims 1, 33 and 37 are patentable over the obviousness rejections of record that would not be overcome by a terminal disclaimer. Appellant asserts that the Examiner has clearly failed to establish a *prima facie* case of the obviousness of any of the claims. Therefore, Appellants respectfully request reversal of the double patenting rejection based on claim 5 of U.S. Patent No. 6,737,619 and the Section 103(a) obviousness rejection of claims 1, 33 and 37 and the remand of this case for further prosecution to permit review of the suggested request for interference with respect to Stangel et al. Review and allowance of the appealed claims as presented herein is requested. The Board is respectfully requested to contact the undersigned by telephone or e-mail with any questions or comments they may have.

Respectfully submitted,  
Dr. Marc Seghatol et al.  
By their attorney



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Date: 2-2-09

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**VIII. CLAIMS APPENDIX (37 C.F.R. § 41.37(c)(1)(viii)).**

1. (Previously Presented) A method for constructing a part of a tooth using a hardened object, said method comprising:
  - (i) forming a hardenable object into a shape suitable for reconstructing part of a tooth from a microwave curable polymer composition; and
  - (ii) using a hand held microwave source to apply microwave energy to intra-orally harden said hardenable object.
- 2-32. (Canceled).
33. (Previously Presented) A method for forming a hardened object comprising:
  - (i) forming a hardenable object from a microwave curable composition; and
  - (ii) using a hand-held microwave source to apply microwave energy to intra-orally harden said hardenable object.
- 34-36. (Canceled)
37. (Previously Presented) A method for forming a hardened object comprising:
  - (i) forming a hardenable object from a microwave curable composition, said object when cured comprising a dental prosthesis or an orthodontic element; and
  - (ii) using a hand-held microwave source to apply microwave energy to intra-orally harden said hardenable object.
- 38-41. (Canceled)

**IX. EVIDENCE APPENDIX (37 C.F.R. § 41.37(c)(1)(ix)).**

None.

**X. RELATED PROCEEDINGS APPENDIX (37 C.F.R. § 41.37(c)(1)(x)).**

None.